

WHAT IS CLAIMED IS:

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A method for controlling duplexing in an ATM system, the ATM system including a plurality of duplexing control boards, each of the plurality of boards coupled to an input/output bus and having a plurality of input/output ports for transmitting/receiving state information, comprising:

5 identifying a first board initially in an active state and a second board initially in a standby state from among the plurality of duplexing control boards;

monitoring state information of the first and second boards using the plurality of input/output ports;

10 generating information to transfer an active authority to the second board, and forming presently processed data of the first board into ATM cell information, when the second board is required to assume the active state;

switching the duplexing to the second board according to the generated information in the form ATM cell information.

2. The method of claim 1, wherein a state of a MS port determines whether a board is the first board in the active state or the second board in the standby state when the board is mounted to pins of a backboard of the ATM system.

3. The method of claim 1, wherein a recognition of and a conversion between the active state and the standby state are carried out by recognizing a state of the second board.

4. The method of claim 1, wherein the ATM cell comprises a header to indicate a destination of transmitted data and a payload containing data information, the payload having first and second three bytes segments, in which two bits indicate node information, four bits indicate slot information, three bits indicate port information, and eight bits indicate virtual channel and virtual path information.

5. The method of claim 1, wherein the ATM cell information transferred to the second board comprises a virtual path and a virtual channel, which are respectively 0 and 255 when the first board is in the active state, and are respectively 1 and 255 when the second board is in the active state.

6. The method of claim 1, wherein the virtual path and the virtual channel of the ATM cell information are respectively zero when there is no a change in the connection, but there is a change in other information generated during an operation of the system.

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7. The method of claim 1, wherein a CARDNOR signal is changed from "1" to "0" when the first board cannot perform a normal operation, and wherein the second board converts a state of a PAIRDIS of the second board to "1", to reset the first board and switch the state of the second board into the active state, when one of a PAIRACT signal and a PAIRNOR signal of the first board becomes "0" so as to transfer the active authority from the first board to the second board for the switching of duplexing.

8. The method of claim 7, wherein the second board switches the state of the PAIRDIS to "0" to release the reset of the first board after the second board is converted into the active state, and sets the master board to the standby state when the state of a ACTOWN signal and a CARDNOR signal of the second board is "1".

9. The method of claim 1, wherein information of an MS port of the second board is analyzed through an MS port of the first board, and when the second board is in the standby state, the active state of the first board is recognized and reported through an ACTOWN port to the second board upon an initialization of the system.

10. The method of claim 1, wherein the state of the first board is confirmed when the second board is initially mounted to slots and is maintained in the standby state, and the second board maintains its standby state when the first board is in the active state,

and wherein the second board is operated in the active state and informs the first board
5 of its state through an ACTOWN port when the master board is in the standby state.

11. The method of claim 1, wherein, when two duplexing boards are
simultaneously mounted to slots, a first board, which is not maintained in the active state,
requests state information from a second board maintained in the active state through the
ATM cell information, and wherein the second board in the active state forms state
5 information of the second board into an ATM cell information, and transfers the ATM
cell information to the first board.

12. A system for controlling duplexing in an ATM system, the ATM system
including a plurality of duplexing control boards connected to an input/output bus,
comprising:

a first interface circuit configured to couple with an input bus to interface
5 a received ATM cell;

a second interface circuit configured to couple with an output bus to
interface a transmitted ATM cell;

a cell disassembling and assembling circuit to disassemble and assemble a data
unit contained in an application layer in the transmitted/received ATM cell by a unit of
10 ~~ATM cell~~;

a control circuit to control an operation to maintain the active state according to data processing information contained in a signal received from the cell disassembling and assembling circuit, when a first board is endowed with the active authority by the signal;

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a plurality of input/output ports coupled to the input/output bus to transmit/receive state information; and

13. The system of claim 12, further comprising memory to store data transmitted/received for the switching of duplexing between the boards.

14. The system of claim 12, wherein the first interface circuit comprises an A-bus interface.

15. The system of claim 12, wherein the second interface circuit comprises a C-bus interface.

16. The system of claim 12, wherein the plurality of input/output ports comprise:

an ACTOWN port to inform a second board of information as to whether a first board maintains the active state or the standby state;

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a PAIRACT port coupled to the ACTOWN port, to recognize if the second board is maintained in the active state or the standby state;

a PAIRDIS port to output a signal to reset the second board;

a CARDDIS port coupled to the PAIRDIS port, the CARDDIS port resetting the first board when a reset signal is applied from the PAIRDIS port;

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a CARDNOR port to transmit information as to whether the first board is currently maintained in a normal state or in an abnormal state, to the second board;

a PAIRNOR port coupled to the CARDNOR port, the PAIRNOR port recognizing state information of the second board according to a signal received from the CARDNOR port; and

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an MS port having information as to whether the first board is a master board or a slave board.

17. The method of claim 1, wherein the first board is a master board in the ~~second board is a slave board.~~

18. The method of claim 1, wherein the state information is provided to each of the first and second boards through the input/output ports connecting the first board ~~to the second board.~~

19. The method of claim 1, wherein the state information determines when the second board is required to assume the active state.

20. The method of claim 2, wherein the state of the MS port is determined when the board is mounted to pins of a backboard of the ATM system.

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21. ~~The method of claim 6, wherein the other information is one of update information and a S/W change.~~

22. A method of controlling duplexing, comprising:
recognizing state information of a first and second duplexing control board by monitoring a plurality of input/output ports on each of the first and second duplexing control boards;

5 forming transfer commands to transfer active authority from one of the first and second control boards to the other control board;

forming ATM cell information from data presently being processed in an active one of the first and second control boards; and

switching the active authority from one of the first and second control
10 boards to the other control board.

23. A duplexing control circuit, comprising:
an interface circuit to couple to an input/output bus;
a control circuit to maintain an active state of the duplexing control circuit based on ATM cell data and state information;

5 a plurality of input/output ports coupled to the input/output bus to transmit state information of the duplexing control circuit, and receive state information from at least one other duplexing control circuit.

24. The circuit of claim 23, wherein the state of the duplexing control circuit is one of an active state and a standby state, and wherein the duplexing control circuit monitors state information of at least one other duplexing control circuit.

25. A method for controlling duplexing in an ATM system, the ATM system including a plurality of duplexing control boards connected to an input/output bus and input/output ports for transmitting/receiving state information, comprising:

5 determining at least one master board and at least one slave board from among the plurality duplexing control boards;

recognizing state information of an opponent board from information of the input/output ports connecting the master board to the slave board, the duplexing control boards being respectively maintained in an active state and a standby state;

generating information to transfer an active authority, and forming data
10 information presently being processed into ATM cell information, when a switching
of duplexing of a board in the active state is necessary according to the recognized state
information; and
switching the duplexing according to the generated information and the
formed ATM cell information.

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